

Executive Summary

This document is a summary of the combined Final Comprehensive Conservation Plan and Environmental Impact Statement (Final CCP/EIS) for the 15-year management of Deer Flat National Wildlife Refuge (NWR or Refuge), located in Canyon, Payette, Owyhee, and Washington Counties, Idaho, and Malheur County, Oregon. The U.S. Fish and Wildlife Service (Service) is required by the National Wildlife Refuge System Administration Act of 1966 (as amended) to develop and implement a CCP for the 15-year management of all national wildlife refuges. This Final CCP/EIS evaluates and compares four alternatives for the conservation of fish, wildlife, and plants within Deer Flat NWR primarily through monitoring of their populations, reduction of human-caused disturbance, management and restoration of habitats, and control of invasive and feral species.

The four alternatives also include management of wildlife-dependent public uses (i.e., the Service's "Big Six" public uses, wildlife observation and photography, hunting, fishing, environmental education, and interpretation) and nonwildlife-dependent uses in a manner that is compatible with the primary conservation purposes for Deer Flat NWR. The environmental consequences section of the Final CCP/EIS evaluates the impacts from management activities and public uses on Refuge resources and is the basis for determining the compatibility of public uses. Appropriateness findings and compatibility determinations that are part of the Service's Preferred Alternative (Alternative 2) are included with the Final CCP/EIS as appendices.

The three action alternatives (Alternatives 2-4) are the outcome of a public planning process that was initiated in 2010. The Service began the process of developing a CCP with release of a Notice of Intent in the Federal Register on July 15, 2010. Open houses were held on July 28, August 20, and August 21, 2010 at the Deer Flat NWR Visitor Center in Nampa, Idaho. Comments were also solicited on the preliminary draft alternatives at open houses on June 3, June 4, July 8, and July 9, 2011. For additional information see the Summary of Public Involvement in Appendix H.

We describe four alternatives for future management of the Refuge in Chapter 2, and we analyze each alternative's potential effects on the biological, cultural, recreational, and economic environment in Chapter 6. Alternative 2 is identified as the Preferred Alternative, because it would reduce disturbance to wildlife and habitats, positively impact habitats through removal of undesirable species and restoration and rehabilitation of desired species, and increase the quality and accessibility of wildlife-dependent recreation, while providing a wide variety of public uses.

Refuge Information and Background

Deer Flat NWR encompasses approximately 11,000 acres and was originally established by Theodore Roosevelt in 1909 to provide a Refuge and breeding ground for migratory birds and other wildlife. The Refuge consists of an overlay on a nearly 9,000-acre Bureau of Reclamation (Reclamation) irrigation facility, adjacent uplands, and approximately 104 islands in the Snake River. Management of the Refuge cannot impede the irrigation purpose of the Reclamation Reservoir. The Refuge provides habitat for over 215 bird species including waterfowl, waterbirds, shorebirds, raptors, and passerines and is an important resting and wintering area for birds migrating along the Pacific Flyway. The Refuge has also documented over 25 species of mammals and invertebrates falling into 13 different scientific orders. Lake Lowell is the largest physical feature on the Refuge, providing open water, emergent vegetation, and mudflats. Other habitat types found on the Refuge include sagebrush-steppe uplands and riparian habitats. The Refuge provides opportunities for all six

wildlife-dependent recreation activities as well as a variety of nonwildlife-dependent activities. The Service manages the Refuge as part of the National Wildlife Refuge System (Refuge System).

Refuge Purposes, Vision, and Management Goals

The Refuge purposes are:

- “as a refuge and breeding grounds for migratory birds and other wildlife” (Executive Order 7655, dated July 12, 1937).
- “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds” (16 U.S.C. 715d, Migratory Bird Conservation Act)
- “suitable for—(1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species” (16 U.S.C. 460k-1, Refuge Recreation Act)
- “the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors” (16 U.S.C. 460k-2, Refuge Recreation Act [16 U.S.C. 460k-460k-4], as amended).

The Service’s vision for Deer Flat NWR included in the Final CCP/EIS is stated as follows:

Deer Flat National Wildlife Refuge is enjoyed, appreciated, protected, and treasured as a place where wildlife comes first. The public actively supports and advocates for the Refuge purpose and programs. Residents of the Treasure Valley value the oases of wildlife habitat in their backyard, both at Lake Lowell and the Snake River Islands. The clean, clear waters and lush riparian landscapes of Lake Lowell and the Snake River Islands provide nesting, resting, and feeding habitat for spectacular concentrations of migratory birds and other wildlife. Reductions in disturbance to important nesting, breeding, resting and feeding areas allow wildlife in all Refuge habitats to successfully reproduce and raise their young thereby sustaining wildlife populations for future generations of Americans to enjoy. The removal of invasive and/or undesirable plant and animal species on the islands of the Snake River and at Lake Lowell provides habitats where songbirds, nesting waterfowl and colonial waterbirds, and native mammals thrive. Habitat goals are met without impacts to the irrigation resources of Lake Lowell.

The Refuge is a place where all visitors are able to enjoy and connect with nature and realize the value of wildlife and habitats. Staff and volunteers share their love of the Refuge and its resources with visitors. In addition to being a destination for hunting, fishing, wildlife photography, and observation, children and adults learn in the outdoor “living classroom” that the Refuge provides. The Refuge also provides for other recreational uses that allow people to enjoy the outdoors without impacting wildlife and habitats. All public use opportunities maintain the integrity of the wildlife resources, instill in visitors the importance of protected open spaces, and provide memorable outdoor experiences for present and future generations of Americans.

This vision for Deer Flat Refuge would be achieved through management toward the following goals as stated in the Final CCP/EIS.

Wildlife and Habitat Goals

Goal 1: Protect, maintain, and enhance viable mudflat, emergent-bed, and open-water habitats associated with Lake Lowell to benefit migratory birds and other wildlife.

Goal 2: Protect, maintain, and enhance riparian forest, benefiting migratory birds and other riparian-dependent species.

Goal 3: Protect, maintain, and enhance nonlake wetland habitats for the benefit of migratory birds and other wildlife.

Goal 4: Protect, maintain, and enhance shrub-steppe habitats characteristic of the historical Columbia Basin.

Goal 5: Protect, maintain and enhance managed grasslands and agricultural crops to support migrating waterfowl as well as resident wildlife.

Goal 6: Gather sufficient scientific information to guide responsible adaptive management decisions for the Refuge's trust resources.

Public Use and Cultural Resources Goals

Goal 1: Visitors of all ages will enjoy abundant native wildlife and increase their understanding and appreciation of the importance of the Refuge as wildlife habitat.

Goal 2: Hunters of all ages and abilities will enjoy a family-friendly, safe, quality hunt that minimally impacts Refuge habitats and wildlife and increases their understanding and appreciation of the importance of Deer Flat NWR as wildlife habitat.

Goal 3: Anglers will enjoy a family-friendly, quality, accessible fishing opportunity that minimally impacts Refuge habitats and wildlife and increases their understanding and appreciation of the importance of Deer Flat NWR as wildlife habitat.

Goal 4: Students, teachers, and Refuge visitors will understand the biology and management of the Refuge and the mission of the National Wildlife Refuge System and will demonstrate stewardship of the Refuge and other wildlife habitats.

Goal 5: Visitors will have limited impacts to wildlife, feel safe during their visit, and understand Refuge regulations and how they help protect wildlife and wildlife habitat as well as other visitors.

Goal 6: The Refuge will initiate and nurture relationships and develop cooperative opportunities to nurture stewardship of the Refuge and instill in others an understanding and appreciation of the importance of Deer Flat NWR as wildlife habitat.

Goal 7: The Refuge will protect and manage cultural resources and look for ways to gain new understanding of the history and cultural resources of both the Lake Lowell Unit and the Snake River Islands Unit.

Management Issues

The following major issues were identified and expressed by the public, various constituents, and Service staff, and have been analyzed and addressed during CCP development.

Wildlife and Habitat Management Issues

- How should Refuge habitats be managed for resident and migratory wildlife species?
- Which habitats should the Refuge consider priorities for active management?
- What types of biological research and monitoring projects should be prioritized?
- What is the Refuge's role in improving water quality?
- How does the Refuge address the issue of invasive and undesirable nonnative plant and animal species?

Public Use Management Issues

- How can the Refuge provide more quality opportunities for wildlife-dependent recreation to visitors of differing abilities without creating an undesirable level of disturbance to wildlife and habitats?
- How can the Refuge provide opportunities for nonwildlife-dependent recreation in a way that does not negatively impact wildlife, habitats, and visitors engaging in wildlife-dependent recreation and education? How can the Refuge increase the quality of its waterfowl and upland hunts?
- How should limited Refuge resources be allocated between environmental education programs as compared to outreach and interpretation to the general visitor?
- How can the Refuge improve safety for its visitors and reduce the amount of illegal activity?

Management Alternatives

The Final CCP/EIS includes four alternatives. Alternative 1 reflects the current management of Deer Flat NWR. Alternative 2 is the Service's preferred management alternative and is generally a more intensive approach to management of Refuge resources when compared with current management under Alternative 1. The primary emphasis of Alternative 2 is reduced disturbance to important breeding, nesting and feeding areas, the reduction of undesirable plant and animal species, and the improvement of compatible recreation opportunities. Alternative 3 represents a more restrictive management approach when compared with Alternative 1 or Alternative 2. Alternative 4 represents the most intensive management approach.

The Service has selected Alternative 2 as its Preferred Alternative because it best fulfills the Refuge's purposes and Service mission by providing needed protections for wildlife and habitats, while continuing to allow most recreational activities currently found on the Refuge. The dynamic seasonal

wildlife closures that would be implemented under Alternative 2 would allow the Refuge to adapt to changes in the nesting and feeding requirements of wildlife, while ensuring that areas that are actively being used by wildlife are closed to potentially-disturbing activities. This technique provides more flexible protections for wildlife as well as more opportunities for compatible recreational uses, especially fishing, than the other action alternatives (Alternatives 3 and 4). Seasonal on-trail regulations would provide wildlife protection while still allowing users to experience Refuge habitats and increase the opportunity for wildlife viewing when wildlife are less sensitive to disturbance. Because of the improvement in wildlife protections, and the opportunity to interact with both traditional and nontraditional Refuge visitors in a way that promotes knowledge of, and involvement in the Refuge, its habitats and wildlife, the Preferred Alternative is expected to best achieve the Refuge's purpose and fulfill the Service's mission.

Alternative 1 (Status Quo, No Action Alternative)

Alternative 1 is the no action alternative required by the National Environmental Policy Act. Management of wildlife, habitat, and public uses would continue at current levels as described below.

Lake Lowell Unit

Management of Wildlife and Habitat. Management of Refuge wildlife would continue to involve basic population monitoring activities. Management of Refuge habitats would continue to involve primarily invasive species control and limited restoration. Invasive plant control would be conducted by one staff member and volunteers using mechanical, chemical, and biological controls.

A no-wake zone would continue to the southeast of Parking Lot 1, and the entire lake would close for winter migration from October 1 to April 14 each year. No other on-water protection would be provided for wildlife. The emergent vegetation along the shoreline of Lake Lowell would remain unprotected. This vegetation provides erosion control, nesting habitat for grebes and other birds, and foraging habitat for waterfowl and wading birds, as well as forage, nesting, and brood rearing habitat for numerous fisheries.

Management of Public Uses. Existing public uses would continue and include the "Big Six" wildlife-dependent recreational activities as well as nonwildlife-dependent activities such as horseback riding, biking, jogging, motorized boating, using personal watercraft, waterskiing, picnicking, and swimming. Under Alternative 1, there are few actions that would alter when, where, or how public uses are allowed to occur within the Refuge. Nearly the entire Refuge would continue to be available for on-trail public recreation, including wildlife observation, photography, jogging, bicycling, on-leash dog walking, and horseback riding. No additional trail or lake access would be provided. Upland and waterfowl hunting would continue to be allowed between Parking Lots 1 and 8, and from the east boundary of Gotts Point to the east boundary of the Leavitt Tract. A youth waterfowl hunt would continue to be hosted in current waterfowl hunt zones. A controlled deer hunt would continue to be allowed between Parking Lot 8 and the New York Canal. Gotts Point would remain closed to vehicular traffic, and limited bank fishing opportunities would exist around the lake. Lake users would continue to participate in numerous surface water recreational activities.

The lake would open to boating on April 15 and close on September 30. The current no-wake zone, from Parking Lot 1 east, would remain in place.

Environmental education would continue to be conducted for on- and off-site programs. Public contact with Deer Flat NWR staff would remain limited and intermittent due to the small number of Refuge employees. Opportunities for visitors to obtain additional information while visiting the Refuge would remain largely dependent on kiosks, brochures, and the availability of volunteers.

Snake River Islands Unit

Management of Wildlife and Habitat. Under Alternative 1, management of Refuge wildlife would continue to involve basic population monitoring activities. Because of the logistical difficulties and small staff, limited invasive species control and/or restoration efforts would be conducted on the Snake River islands.

Management of Public Uses. Existing public uses would continue and include wildlife observation and deer, upland, and waterfowl hunting. The Snake River islands would continue to be open from June 1 to January 31 for off-trail, free-roam activities, including shoreline fishing.

Alternative 2 (Service Preferred): Protect Wildlife Using No-wake Zones and New Seasonal Closures while Providing a Variety of Recreational Activities

Alternative 2 would emphasize connecting families to nature by providing access to new facilities as well as a wide range of wildlife-dependent and nonwildlife-dependent recreational activities. Activities would be managed to protect wildlife, reduce conflicts between users, and increase safety. On Lake Lowell, the Refuge would protect shoreline feeding and nesting sites through no-wake zones and seasonal closures. Emphasis would be placed on developing the interpretive programs with the goal of increasing visitor awareness of Deer Flat NWR's purpose and goals and to encourage conservation-oriented visitor behavior. Gotts Point would be opened to vehicular traffic upon completion of a cooperative agreement with Canyon County for increased law enforcement presence.

Lake Lowell Unit

Management of Wildlife and Habitat. To provide needed protections for lake-dependent wildlife, a 200-yard no-wake zone is proposed along the south side of the lake between Parking Lots 1 and 8. The entire lake would continue to be closed to motorized boating for the benefit of wintering and migrating birds from October 1 to April 14 each year. No-wake zones would also be required in the Narrows, and the existing no-wake zone on the southeast end of the lake would be expanded to start at a line between Gotts Point and Parking Lot 1. Motorized boats would be allowed in the no-wake zones; however, boaters would be allowed to travel only at speeds that do not create a wake (generally <5 mph). Alternative 2 would also create seasonally closed areas, such as heron rookeries, eagle nests, and grebe nesting colonies, to protect bird species. An increase in habitat enhancement through invasive species removal and vegetation manipulation is proposed. Increases in wildlife and habitat research and assessments would be focused on providing a strong scientific base for future management decisions.

Management of Public Uses. The Preferred Alternative provides access for a wide range of outdoor recreational activities while putting in place measures (e.g., no-wake zones and seasonal closures) to protect wildlife. Management efforts would focus on increasing participation in all six priority wildlife-dependent recreational activities. Fishing and interpretation would be emphasized to serve a growing urban and diverse population. Management of public uses would seek to connect people with nature and build support for wildlife conservation.

Snake River Islands Unit

Management of Wildlife and Habitat. Refuge staff would emphasize management of the Snake River Islands Unit by increasing wildlife inventory and monitoring efforts and increasing invasive species control (following the Integrated Pest Management Plan) and restoration efforts. Islands management would be prioritized using several factors and managed accordingly. The most biologically intact islands would receive higher management priority (see Objective 2.2). Island closure dates would be adjusted to better protect nesting geese, wading birds, gulls, and terns. An array of management techniques may be used, including prescribed fire and aerial application of herbicide and/or seed.

Management of Public Uses. Existing public uses would continue and include wildlife observation and deer, upland bird, and waterfowl hunting on over 1,200 acres. Most of the Snake River Islands Unit would be open for off-trail, free-roam activities, including shoreline fishing, from June 15 to January 31. Heron- and gull-nesting islands (four to six islands) would be open for off-trail, free-roam activities from July 1 to January 31.

Alternative 3: Protect Wildlife Using a No-wake Zone in the East Pool with Seasonal and Permanent Closures while Providing for a Variety of Recreational Activities

Under Alternative 3, the Refuge would protect habitat in nesting and feeding sites and in open-water habitat by establishing a no-wake zone in the East Pool, morning restrictions on wake-causing activities in the West Pool, and other seasonal and permanent closures. A no-wake zone in the East Pool would make that portion of the lake more suitable for fishing and wildlife observation. Overall, Alternative 3 attempts to increase the quality of wildlife-dependent recreation by eliminating horseback riding and dog walking and segregating high-speed boating from wildlife-dependent users. However, a drawback of the no-wake zone changes would be an increase in the amount of time it would take wildlife-dependent users to reach high-quality wildlife areas. Under Alternative 3, the Refuge would not be open to some activities including horseback riding and dog walking. Bicycling would only be allowed on the trail adjacent to the entrance road.

Lake Lowell Unit

Management of Wildlife and Habitat. Emergent plant beds in Murphy's Neck and emergent plant beds from Parking Lots 3 to 8 would be closed to human activity all year. The entire lake would be closed seasonally to protect wintering and migrating birds. All active and historical grebe nesting colonies would be closed to public use by establishing a 500-yard closure during boating season. There would be a 100-yard seasonal closure (from July 15 through September 30) to protect shorebird habitat along the shoreline from Murphy's Neck to the Narrows. A 200-yard closed area and a 200-yard no-wake zone would protect emergent beds and wildlife on the south side of the West Pool. An increase in habitat enhancement through invasive species removal and vegetation manipulation is proposed. Increases in wildlife and habitat research and assessments would be focused on providing a strong scientific base for future management decisions.

Management of Public Uses. Under Alternative 3, the lake would be open to use from April 15 to September 20 with only no-wake activities allowed in the East Pool and wake-causing activities allowed from noon to one hour before sunset in the West Pool. If feasible, a wildlife observation/

photography boardwalk would be constructed between Parking Lots 1 and 3. To improve the quality of both upland and waterfowl hunting, upland game bird hunting would be allowed only on the east end of the Refuge from the west boundary of the Leavitt Tract to the entrance at Greenhurst Road. A controlled waterfowl hunt (e.g., permit system or sign-in/out) would be allowed only on the south side of the lake between Parking Lots 3 and 8 with a daily limit of 25 shotgun shells per hunter. Other wildlife-dependent activities would be allowed concurrent with the upland hunt and on the boardwalk on the south side of the lake. However, because there is a higher demand by waterfowl hunters and less visibility on the South Side Recreation Area, all trails in the waterfowl hunt area would be closed to the nonhunting public from Parking Lots 3 through 8. The boating season would end on September 20 in order to increase the quality of the youth hunt and reduce the possibility of unsafe hunter/boater interactions.

Snake River Islands Unit

Management of Wildlife and Habitat. Under Alternative 3, Refuge staff would emphasize management of the Snake River Islands Unit by increasing wildlife inventory and monitoring efforts and increasing invasive species control (following the Integrated Pest Management Plan) and restoration efforts. The islands' management would be prioritized using several factors and managed accordingly. The most biologically intact islands would receive higher management priority. Island closure dates would be adjusted to better protect nesting geese, wading birds, gulls, and terns. An array of management techniques may be used including prescribed fire and aerial application of herbicide and/or seed.

Management of Public Uses. Existing public uses would continue; these uses consist of wildlife observation and deer, upland and waterfowl hunting on 1,219 acres. Most of the Snake River Islands Unit would be open for off-trail, free-roam activities, including shoreline fishing, from June 15 to January 31. Heron- and gull-nesting islands (four to six islands) would be open for off-trail, free-roam activities from July 1 to January 31.

Alternative 4: Protect Wildlife with Entire Lake Designated as No-wake Zone with an Emphasis on Wildlife-dependent Recreation

Alternative 4 is the most protective alternative, providing wildlife restrictions not found in Alternatives 1 through 3. Habitat management would restore, maintain, or mimic natural ecosystem processes as often as possible. To provide adequate sanctuary for Refuge species, increase visitors' opportunities to appreciate wildlife, and provide the best possible wildlife-dependent recreational opportunities, fishing, hunting, wildlife observation, wildlife photography, environmental education, and interpretation would be the only recreational activities allowed on the Refuge. The entire lake would be a no-wake zone.

To provide a sanctuary for waterfowl, shorebirds, and waterbirds, as well as fish and other wildlife, all the emergent beds would be closed to public access.

Lake Lowell Unit

Management of Wildlife and Habitat. To reduce disturbance to feeding and resting wildlife, only boating at no-wake speeds would be allowed on Lake Lowell. All emergent beds and the southeast end of the lake would be closed to public use to protect nesting and feeding waterbirds, waterfowl, and shorebirds. The entire lake would continue to be closed for wintering and migrating birds from

October 1 to April 14 each year. The shoreline from Murphy's Neck to the Narrows would be protected by a 100-yard closure that would be closed year-round to the public to provide undisturbed loafing and feeding habitat for shorebirds and waterfowl. Trees would be removed in this area to enhance mudflats for migrating shorebirds. An increase in habitat enhancement through invasive species removal and vegetation manipulation is proposed. Increases in wildlife and habitat research and assessments would be focused on providing a strong scientific base for future management decisions.

Management of Public Uses. Under Alternative 4, there are numerous actions that would alter when, where, and how public uses would be allowed. Boating would be allowed at no-wake speeds on all areas of the lake open to the public from April 15 to September 30. Several portions of the Refuge would be closed to all public activity (see Map 9). The Refuge would not be open to nonwildlife-dependent activities including horseback riding, pet walking, bicycling, and ice skating.

Alternative 4 includes several elements to protect wildlife and enhance recreational experiences at the Refuge. To minimize conflicts with and improve the quality of the waterfowl hunt program, upland game hunting under Alternative 4 would no longer be allowed at the Lake Lowell Unit. Waterfowl hunting would be allowed on the south side of the Lake Lowell Unit from Parking Lots 1 to 8 with a daily limit of 25 shotgun shells per hunter.

Snake River Islands Unit

Management of Wildlife and Habitat. Under Alternative 4, Refuge staff would emphasize management of the Snake River Islands Unit by increasing wildlife inventory and monitoring efforts and increasing invasive species control (following the Integrated Pest Management Plan) and restoration efforts. The islands' management would be prioritized using several factors and managed accordingly. The most biologically intact islands would receive higher management priority. Island closure dates would be adjusted to better protect nesting geese, wading birds, gulls, and terns. An array of management techniques may be used including prescribed fire and aerial application of herbicide and/or seed.

Management of Public Uses. Existing public uses would continue and include wildlife observation and deer, upland and waterfowl hunting on 1,219 acres. The Snake River Islands Unit would be open for off-trail, free-roam activities from June 15 to January 31. Under Alternative 4, shoreline fishing would also be available from June 15 to January 31 each year on all islands.

Environmental Consequences

Implementation of each alternative presented in the Final CCP/EIS would be expected to cause both beneficial and adverse impacts to Refuge resources, recreation opportunities, and local communities and their economies. The following briefly summarizes the various impacts anticipated from each of the four alternatives.

Alternative 1 (Status Quo). Overall, we anticipate Alternative 1 would have the least positive impacts to wildlife and habitats. It would also have a negative impact on wildlife-dependent activities. These adverse impacts would result primarily from future increases in visitation and, limited protections for wildlife from human-caused disturbance. Specific negative impacts would be associated with:

- Continued high-speed use of areas adjacent to sensitive habitats and wildlife species,
- Continued use of upland areas adjacent to sensitive habitats and wildlife species,
- Continued use of all trails by nonwildlife-dependent users,
- Continuation of current invasive species control program with minimal mapping, monitoring and/or increase in removal area, and
- Increases in visitation.

Important beneficial impacts from Alternative 1 would result from partnerships that could be formed to explore water quality improvement projects.

Alternative 2 (Preferred Alternative). We anticipate Alternative 2 would have greater long-term beneficial impacts on fish, wildlife, plants, and their habitats, as well as on recreation opportunities, than Alternative 1. Beneficial impacts would be related primarily to:

- Targeted seasonal closures of foraging, resting and nesting areas,
- Increases in planning, monitoring, and coverage area of invasive species removal,
- Enhancement of riparian, mudflat and emergent habitats through vegetation removal,
- A smaller increase in visitation than that found in Alternative 1,
- Increased access to quality hunting and fishing opportunities for youth and visitors with mobility impairments,
- Increases in visitor facilities, including a visitor contact station, trails, and blinds,
- Retargeting of the environmental education and interpretation programs to reach more on-site visitors,
- Opportunities for separation of nonwildlife-dependent uses from wildlife-dependent uses through the use of designated trails and no-wake zones,
- Seasonal opportunities for off-trail travel, and
- Partnerships to improve water quality.

Short-term adverse impacts may occur to air quality, visitors, wildlife, or habitats from research and restoration activities. Long-term negative effects may be felt by some hunters as nonhunters are allowed off-trail. Some long-term negative effects to wildlife and habitats may occur from the construction of new public use facilities.

Alternative 3. Alternative 3 is expected to result in additional beneficial impacts to wildlife, habitats, and nonconsumptive wildlife-dependent public uses than Alternative 2 but would negatively impact nonwildlife-dependent users more than Alternatives 1 and 2. Positive impacts from Alternative 3 would be related primarily to:

- Increases in habitat and wildlife protection from human-caused disturbance through larger and longer closures and no-wake zones than those found in Alternative 2,
- Regulations allowing upland uses on-trail only,
- Increases in planning, monitoring, and coverage area of invasive species removal,
- Enhancement of riparian, mudflat, and emergent-bed habitats through vegetation removal,
- A decrease in visitation from current levels, which would lead to less habitat and wildlife disturbance,
- Increased access to quality hunting and fishing opportunities for youth and visitors with mobility impairments,

- Increases in visitor facilities including a boardwalk, visitor contact station, trails, and blinds,
- Retargeting of the environmental education and interpretation programs to reach more on-site visitors,
- Increases in the quality of wildlife-dependent recreation through the removal of almost all nonwildlife-dependent upland uses, and
- Partnerships to improve water quality.

Negative impacts in Alternative 3 would mostly affect nonwildlife-dependent and consumptive wildlife-dependent recreation. Negative impacts to public uses from Alternative 3 would be related primarily to:

- Reductions in waterfowl and upland hunting acreage at Lake Lowell,
- Increased difficulty in reaching fishing sites in the East Pool due to the no-wake zone,
- Containment of high speed watercraft to the West Pool,
- Removal of almost all nonwildlife-dependent upland recreation, and
- Increases in closed areas over Alternative 2.

The enforcement of on-trail regulations would be expected to negatively impact wildlife observers and photographers.

Alternative 4. Alternative 4 is expected to result in the most long-term beneficial impacts to wildlife, habitats, and nonconsumptive wildlife-dependent public uses but would negatively impact nonwildlife-dependent users more than Alternatives 1, 2, and 3. Positive impacts from Alternative 4 would be related primarily to:

- Increases in habitat and wildlife protection from human-caused disturbance through larger and longer closures and no-wake zones than those found in Alternative 3,
- Regulations allowing upland uses on-trail only,
- Increases in planning, monitoring, and coverage area of invasive species removal,
- Enhancement of riparian, mudflat, and emergent-bed habitats through vegetation removal,
- Lower visitation rates than under Alternative 3, which would lead to less habitat and wildlife disturbance,
- Increased access to quality hunting and fishing opportunities for youth and visitors with mobility impairments,
- Increases in visitor facilities including a visitor contact station, trails, and blinds,
- Improvements to the environmental education program to better meet the needs of teachers,
- Increases in the quality of wildlife-dependent recreation through the removal of almost all nonwildlife-dependent uses, and
- Partnerships to improve water quality.

Negative impacts in Alternative 4 would mostly affect nonwildlife-dependent and consumptive wildlife-dependent recreation. Negative impacts to public uses from Alternative 4 would be related primarily to:

- Reductions in waterfowl hunting acreage at Lake Lowell,
- Removal of upland hunting from Lake Lowell,

- Increased difficulty in reaching fishing sites in the East Pool due to the entire lake being a no-wake zone,
- Removal of nonwildlife-dependent on-water recreation, and
- Removal of almost all nonwildlife-dependent upland recreation,

The enforcement of on-trail regulations would be expected to negatively impact wildlife observers and photographers.

More detailed information about the effects of various alternatives on wildlife, habitat, and public use can be found in Chapter 6.